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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,483	12/14/2001	David S. Wardrop	130109.431	5180
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SEED INTELLECTUAL PROPERTY LAW GROUP PLLC 701 FIFTH AVE SUITE 6300 SEATTLE, WA 98104-7092				
			EXAMINER ALEJANDRO, RAYMOND	
			ART UNIT 1745	PAPER NUMBER

DATE MAILED: 02/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action

Application No.

10/017,483

Applicant(s)

WARDROP ET AL.

Examiner

Raymond Alejandro

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--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 22 January 2004 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE: Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
- ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☐ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
 - (b) ☐ they raise the issue of new matter (see Note below);
 - (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
 - (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____

3. ☐ Applicant's reply has overcome the following rejection(s): _____.
4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: see next page.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☐ will not be entered or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: _____.

Claim(s) objected to: _____.

Claim(s) rejected: 1-7 and 9.Claim(s) withdrawn from consideration: 8.

8. ☐ The drawing correction filed on _____ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____.
10. ☐ Other: _____

Response to Arguments

1. Applicant's arguments filed 01/22/04 have been fully considered but they are not persuasive.

2. The main contention of applicants' arguments is premised on the assertion that the prior art's teaching is in direct contrast to the limitations recited in the instant claims, for instance, a first transistor being responsive to the stack terminal voltage to selectively couple the first dump load in parallel with the first set of fuel cells when the stack terminal voltage exceeds a threshold voltage and to uncouple the first dump load when the stack terminal voltage is below the threshold voltage. However, this assertion is not sufficient to overcome the rejection. In this regard, it is first noted that applicants did agree with the fact that the prior art somehow instructs the skilled artisan to coupling a load to the fuel cell stack when the output voltage falls below the threshold value and thus, uncoupling the load from the fuel cell stack when the output voltage exceeds the threshold value. Accordingly, the prior art clearly discloses the functional relationship of either coupling or uncoupling in response to fuel cell operational conditions or modes. Having said that, the question to answer now is whether or not one of ordinary skill in the art would have sufficient sophistication to implement a reversed functionality based on the foregoing teachings. In order to answer this question, it is secondly noted that the prior art itself does not teach, suggest or reveal that an opposite functionality or behavior of its fuel cell system will definitely cause detrimental damages to the fuel cell system as a whole, therefore, one of ordinary skill would envision that such opposite functionality could be an obvious variation of the claimed invention as it will only be necessary to reset the fuel cell control system parameter to operate in an opposite fashion to satisfy the claimed requirement.

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3. Moreover, where functional language is used in an apparatus claim, the burden shifts to applicant to establish that the disclosed apparatus does not and cannot function in the manner required by the claims. Given that the cited prior art is indicative of the level of ordinary skill someone possesses (*i.e. coupling or uncoupling a load in response to fuel cell operational conditions or modes*), it is noted that resetting the load to couple/uncouple responsive to the fuel cell operational mode would not result in such catastrophic runaway of the system as argued by the applicants because if serious, significant or a large number of unsatisfactory problems were readily apparent, the prior art would have reported or addressed them. *Since applicants have not provided objective evidence demonstrating that the fuel cell apparatus of the prior art cannot perform as claimed, or a reversed functional modification of its control system would cause such detrimental/catastrophic damages thereto, it is noted that this assertion appears to be solely based on applicants' own understanding of how the system should respond or behave.* Moreover, it is within the level of ordinary engineering skill to reverse a function or adjust a controlling signal for responding to an opposite criteria or parameter. It has been held that adjusting functional requirements and/or reversing functions are prima facie case of obviousness. Further, the manner in which an apparatus operates is not germane to the issue of patentability of the apparatus itself unless a different structural feature distinguishes the apparatus from the prior art as apparatus claims cover what a device is, not what a device does.

4. With respect to the dump load, the applicant has previously contended the term "dump load" strictly refers to a resistive element such as a resistor for thermally dissipating excess of power in the form of heat. In that, the examiner asserted that the term "dump load" has been interpreted as any conventional load element because even though the specification appears to

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define the term "dump load", the specification also encompasses the possibility of including a capacitance (a capacitor) and/or an inductance (an inductor) as part of the dump load. Thus, it appears that the term "dump load" does not only refer to the resistive element but also to several other electrical features as applicable. Applicant is encouraged to provide evidence as to how the term "dump load" is conventionally interpreted in the electrical field as well as a clear indication of the specific novel feature/behavior/functionality that applicants intends to claim as the invention. Thus, the load feature of the '695 patent have substantially the same functionality as the claimed load feature in the instant application, and thus, the overall monitoring and voltage regulation system of the prior art is able to respond as presently claimed. In this regard, it is noted that the features upon which applicants relies (i.e. the load including resistive element such as resistor for thermally dissipating excess power, or also including capacitive or inductive elements) are not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.

5. In general, since there are insubstantial differences between fuel cell stack assembly of the prior art and the claimed fuel cell stack assembly, the burden is shifted to the applicants to provide objective evidence demonstrating that Keller et al's fuel cell when used as instantly intended in the present invention will indeed suffer detrimental effects. Unless applicants clearly differentiate the structure of the claimed fuel cell stack assembly from the structure of prior fuel cell, it is contended that, for practical purposes, the fuel cell of the prior art is able to implement the defined requisite functionality to satisfy the claimed requirement as the prior art features are a structural equivalent of the corresponding features claimed in the instant invention.

A handwritten signature, possibly reading "RAM", is written in black ink over the end of the text in the fifth paragraph.